

Status of β^* Measurement at D0

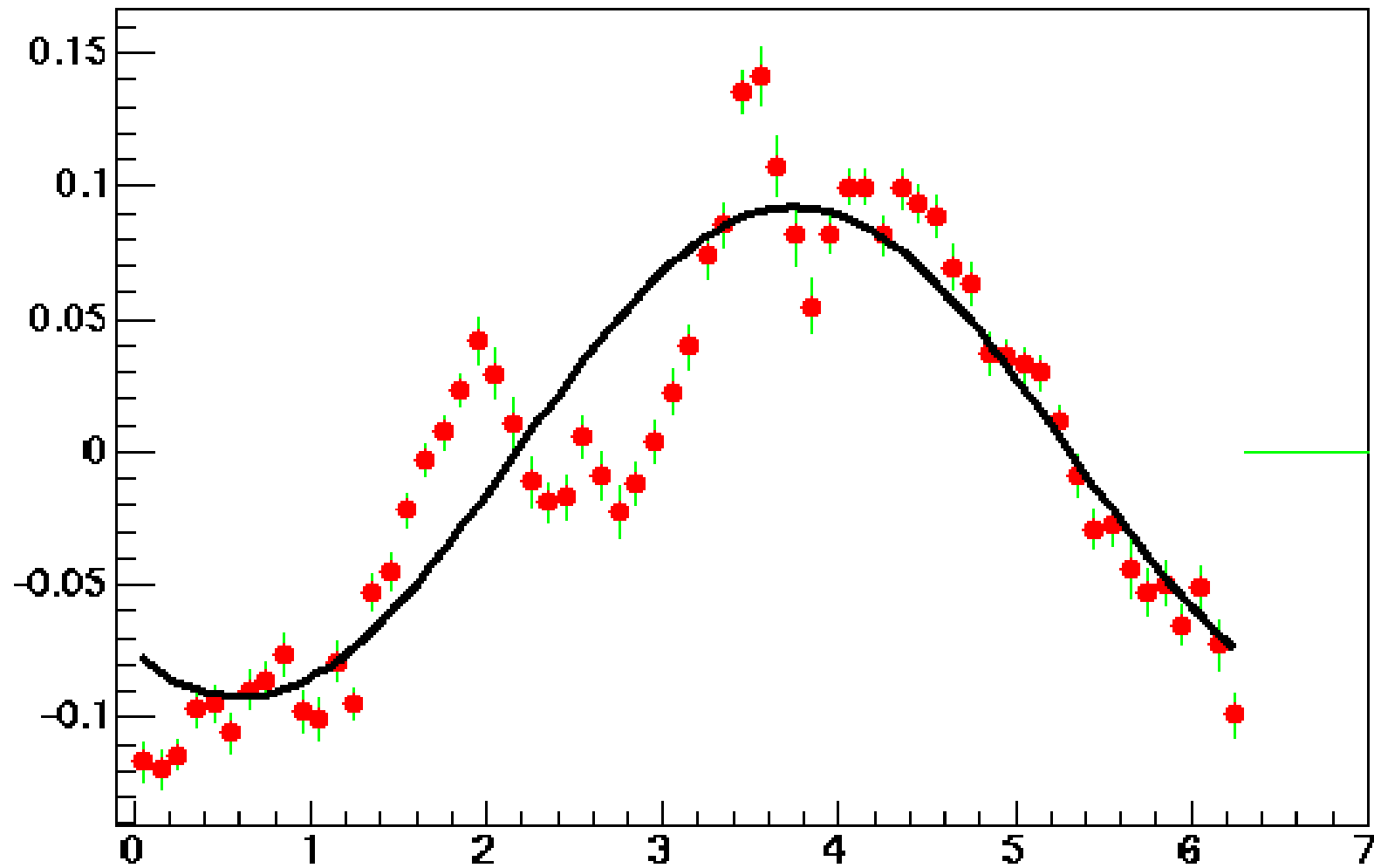
Avdhesh Chandra
Juan Estrada

Luminosity Meeting
12th Jan 2005

Status

- Pre-shutdown results are at:
http://www-clued0.fnal.gov/~avdhesh/Beam_main.html
- For Post-shutdown data, old method to measure β^* failed because of:
 - Software problem (new release to make root files).
 - Old code is no more useful due to shift in interaction point.
 - Even after fixing above two problems DCA vs Phi plots look incorrect.

dca vs phi:no correction:30<z<35



File

State

Page

Landscape

0.500

Letter

202327_run_plots.pscanvas

Wed Jan 5 00:20:20 2005

Variable Size

Open

Print All

Print Marked

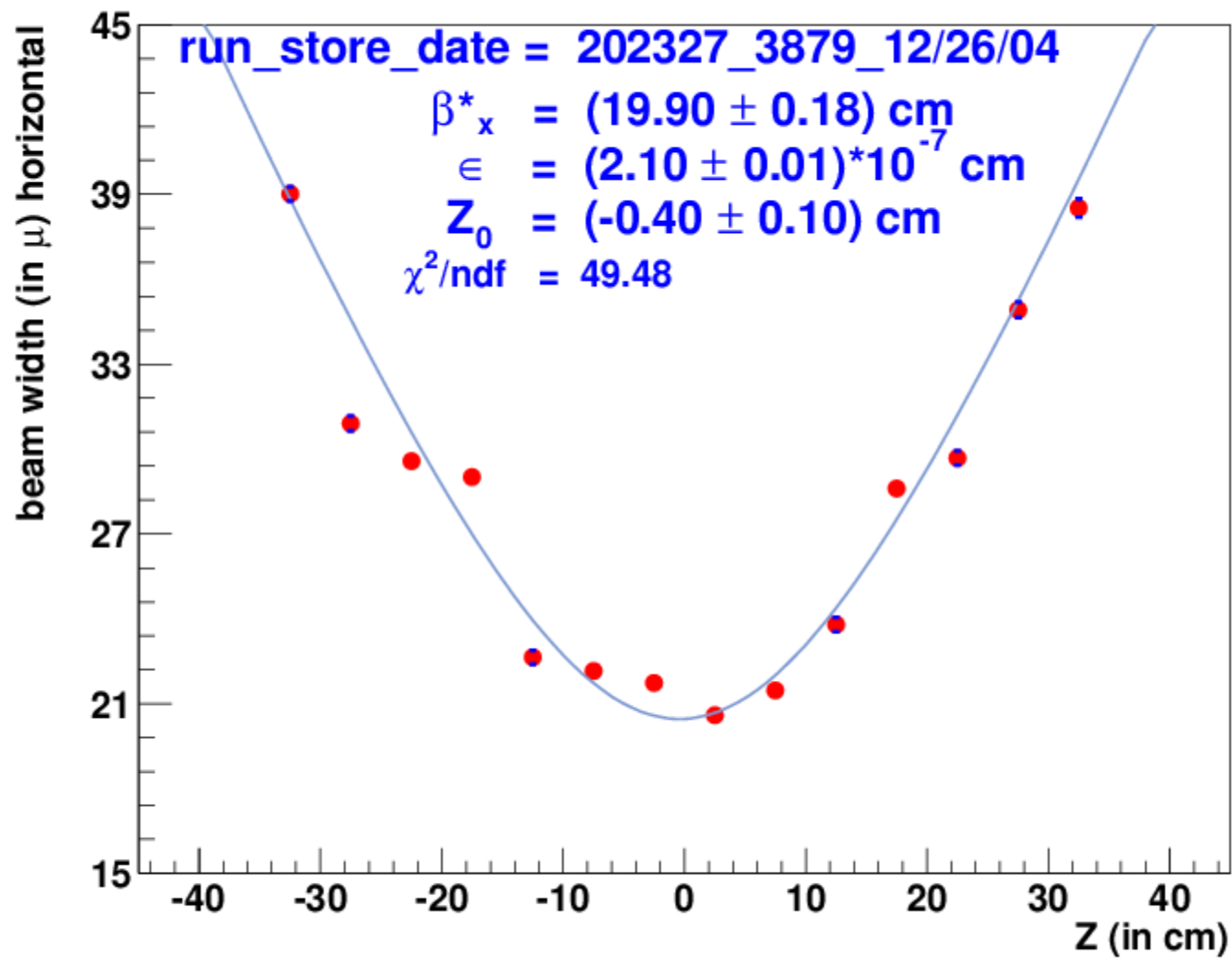
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Redisplay

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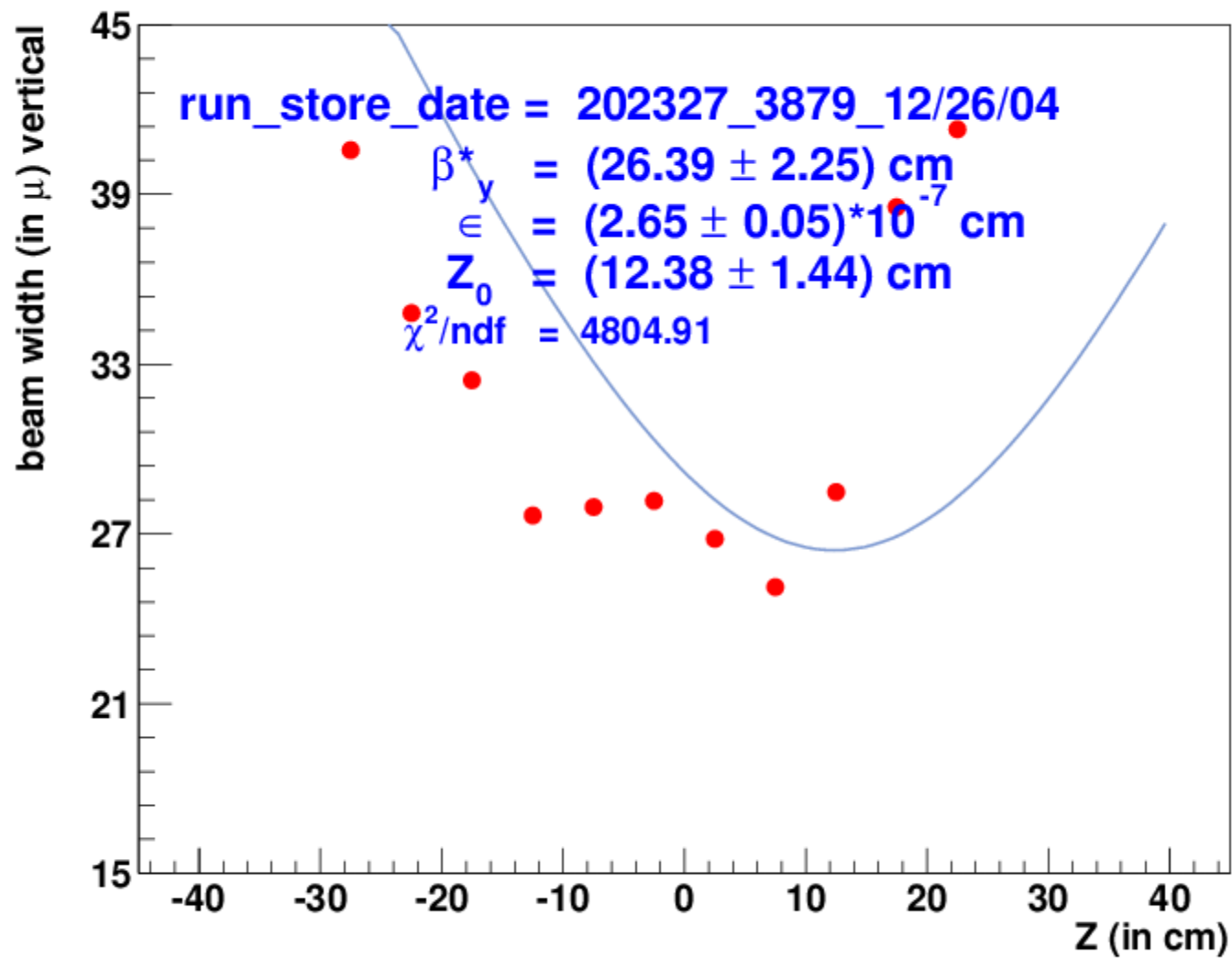
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Redisplay

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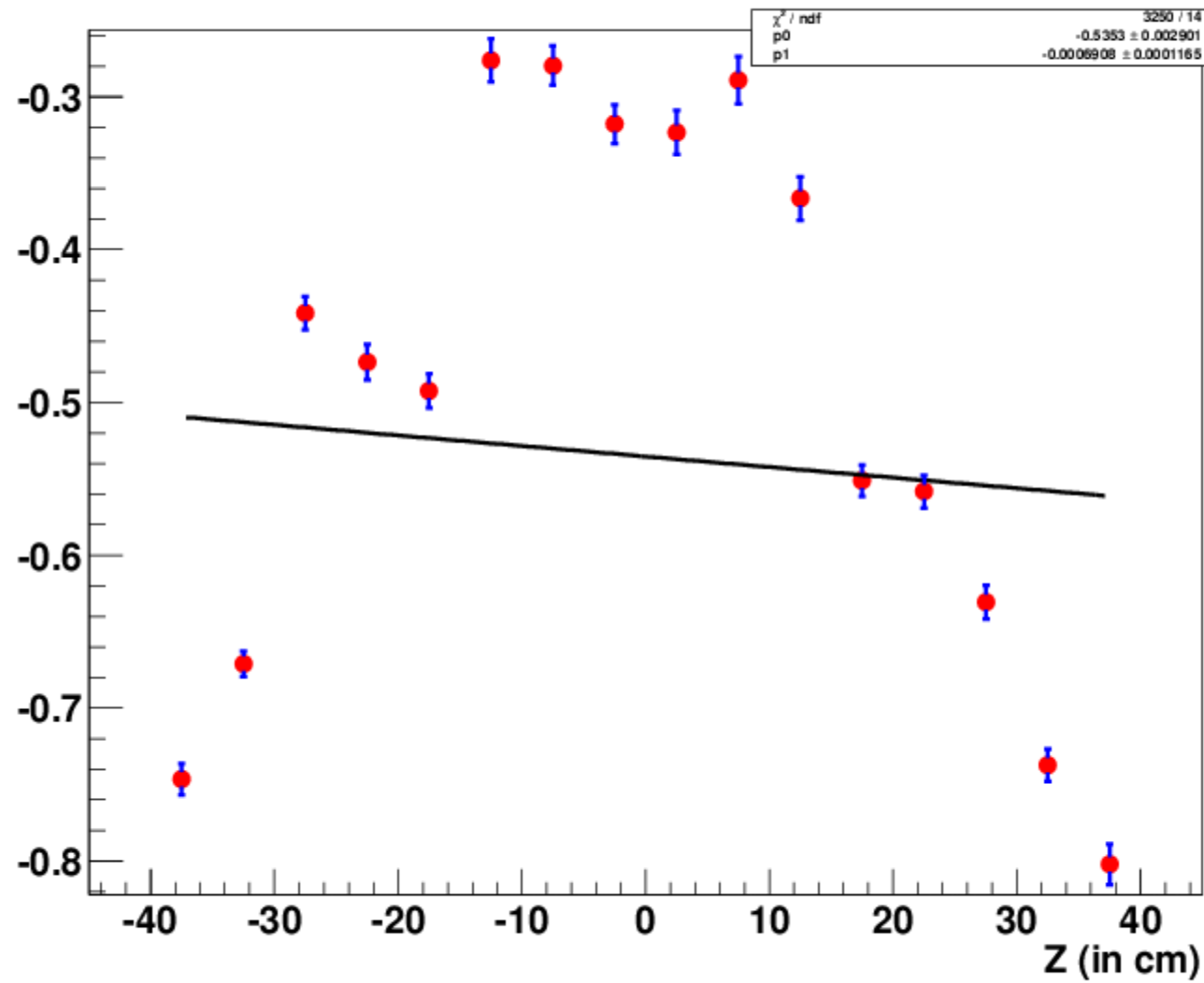
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Correlation



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Variable Size

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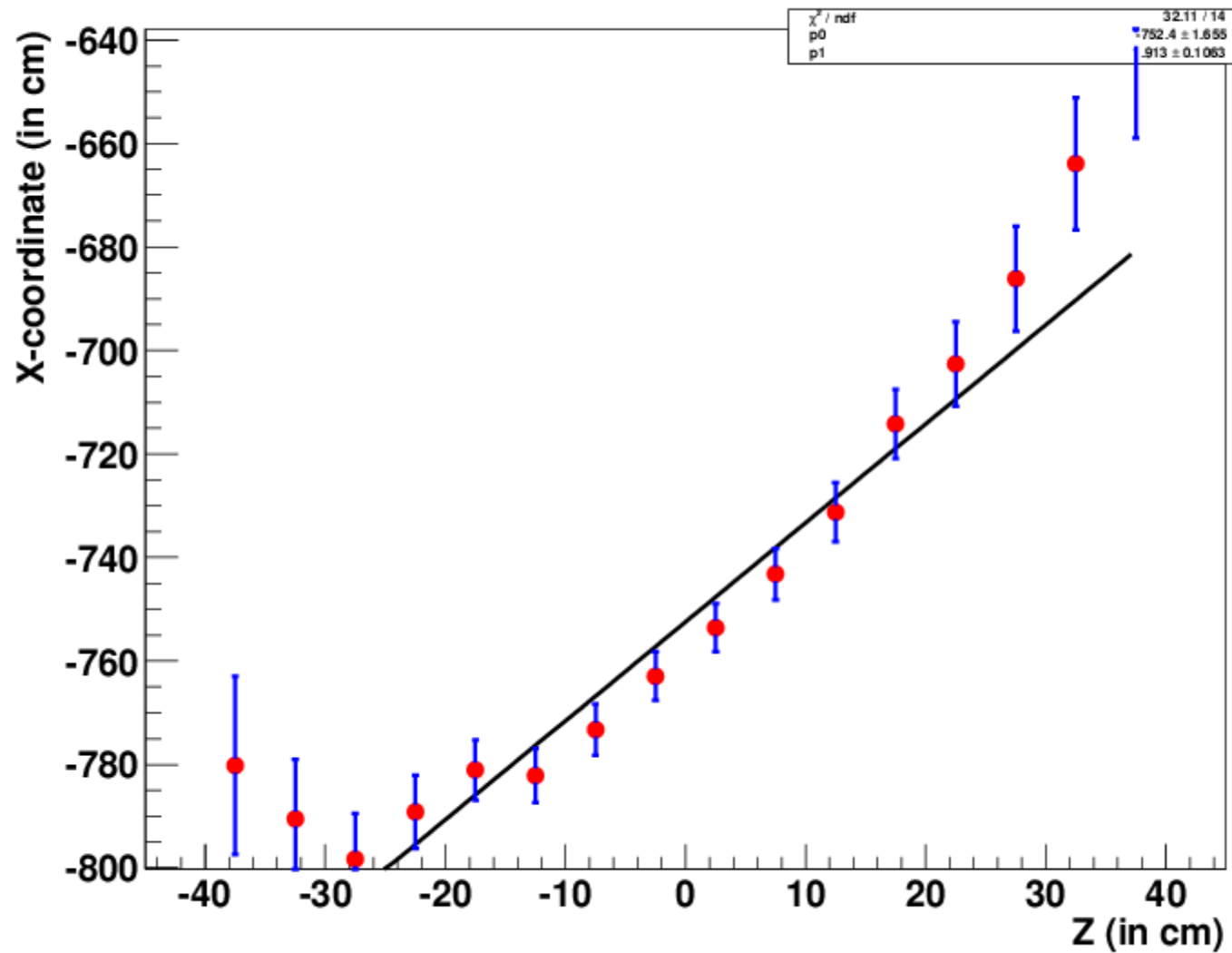
Save All

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Redisplay

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File

State

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Landscape

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Letter

202327_run_plots.pscanvas

Wed Jan 5 00:20:20 2005

Variable Size

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Print All

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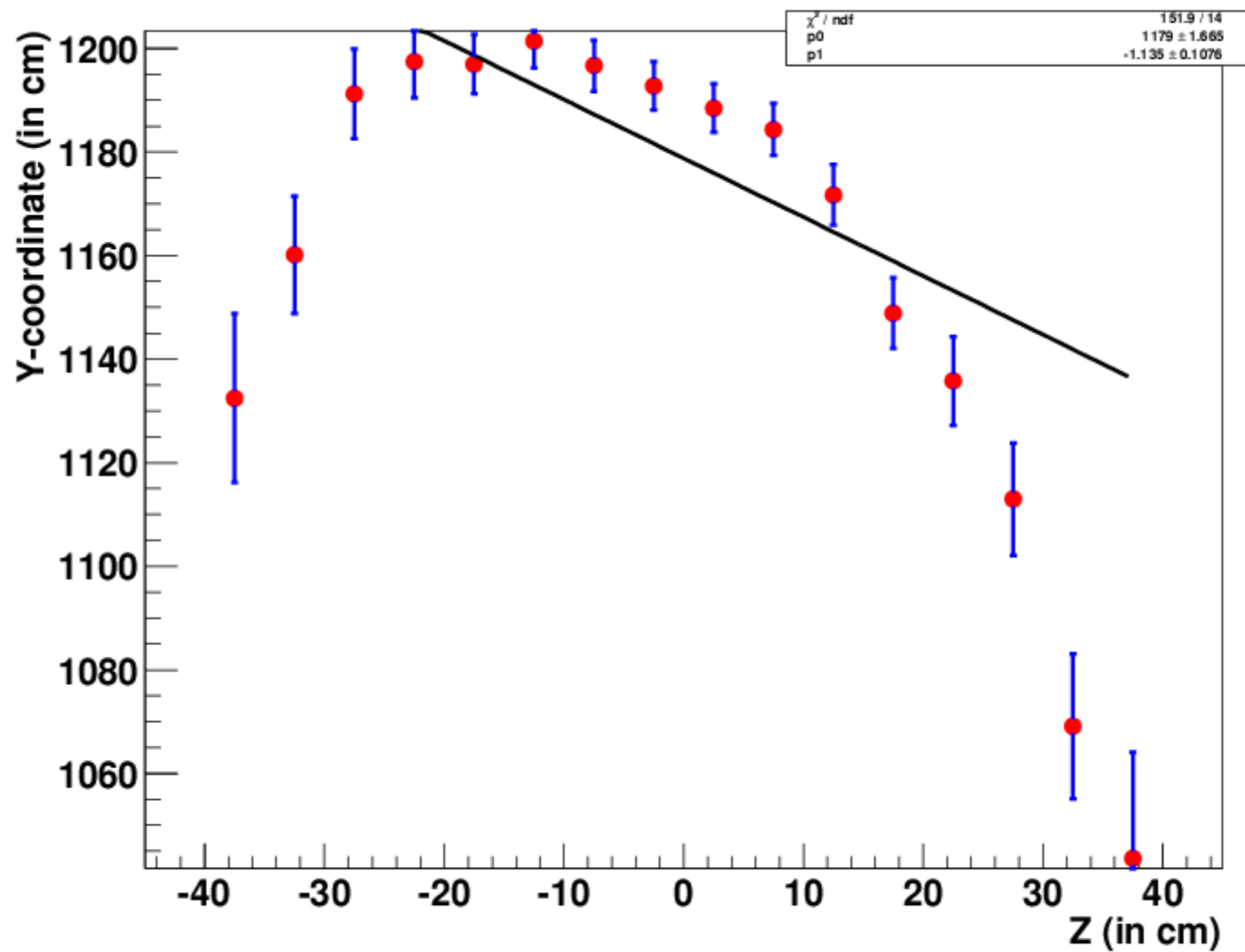
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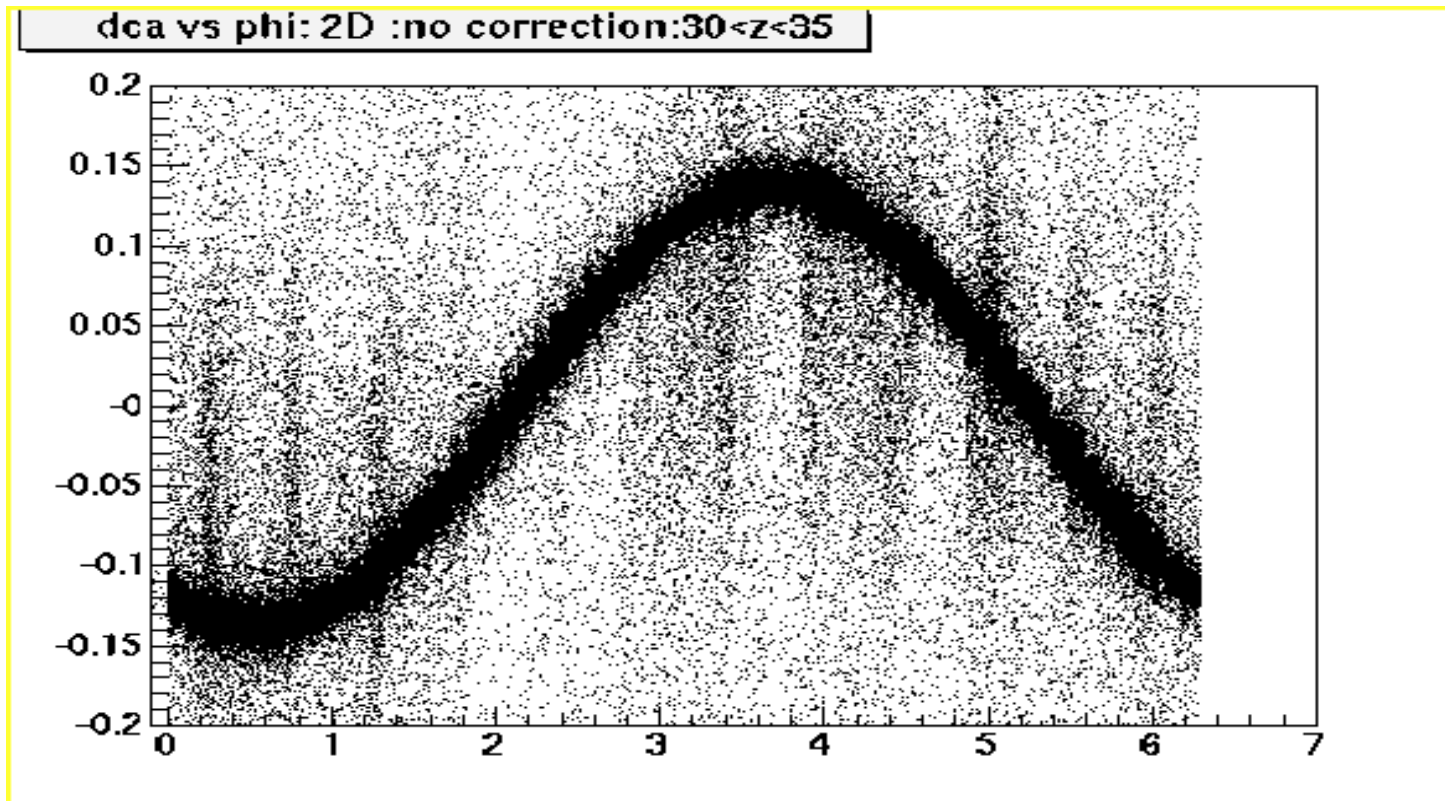
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Redisplay

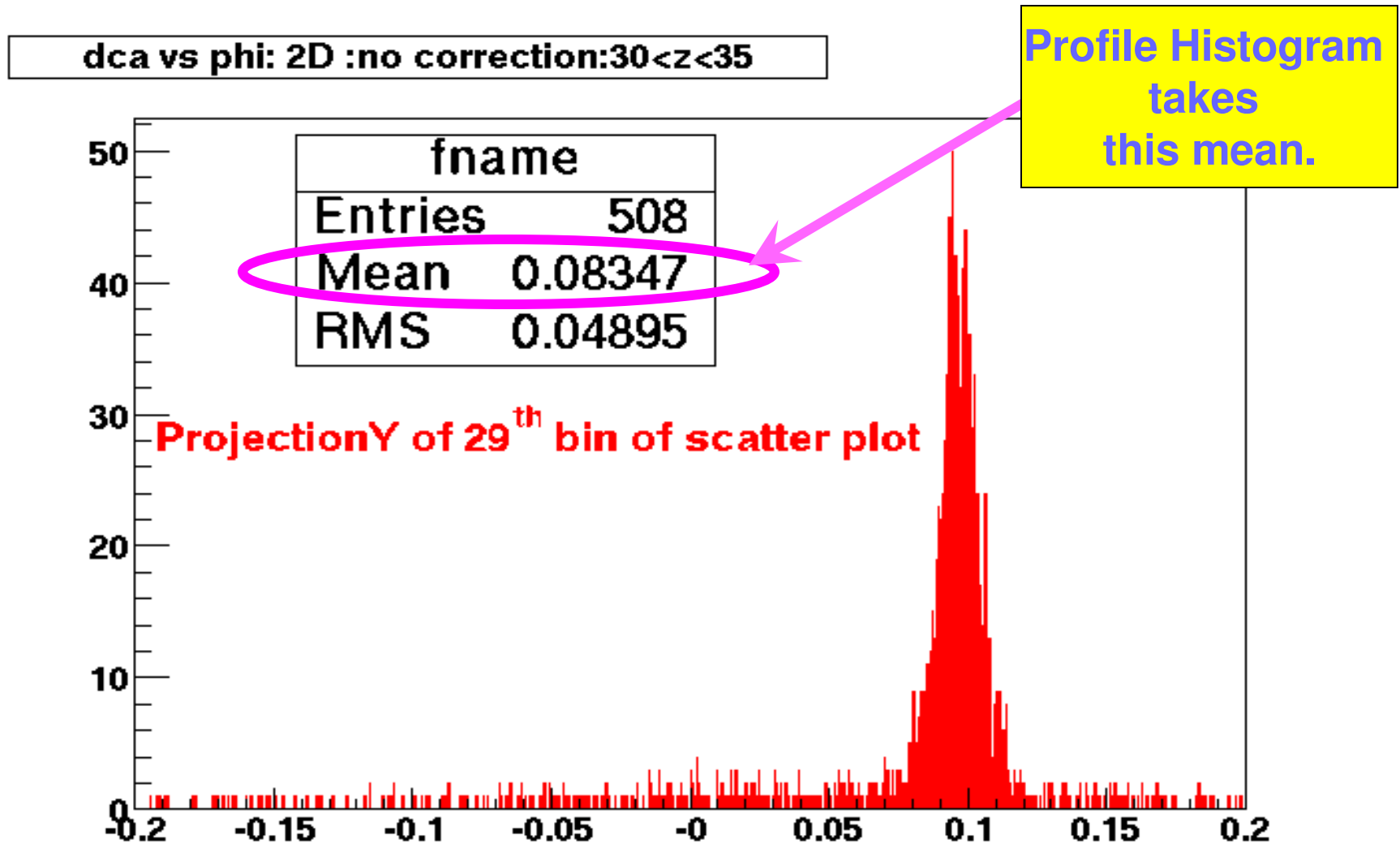
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Closer look into the problem:

Because of interaction point shift in post-shutdown, amplitude of DCA-PHI plot became relatively very large compared to pre-shutdown.

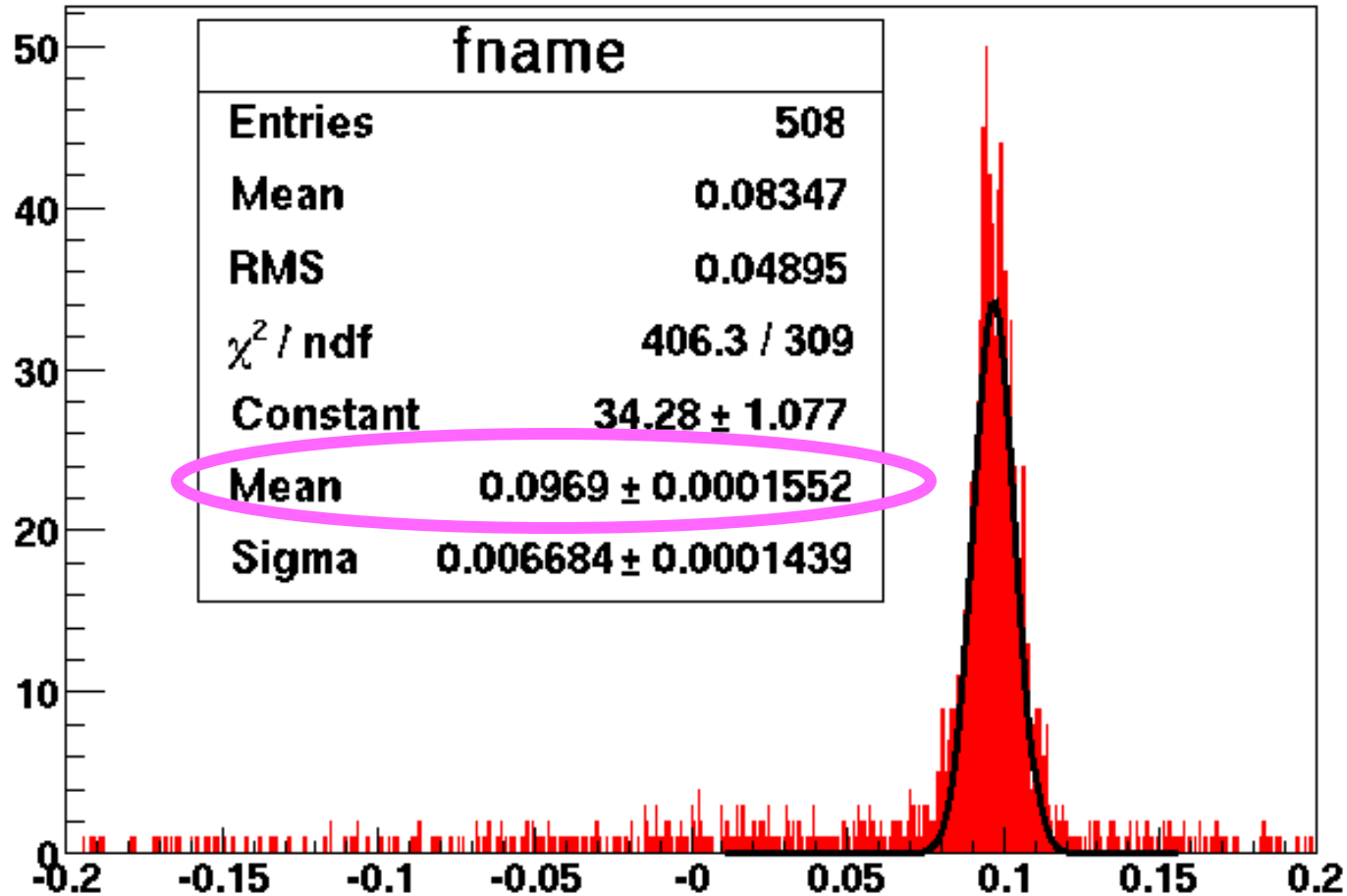


Projection plot for a particular PHI bin looks like:

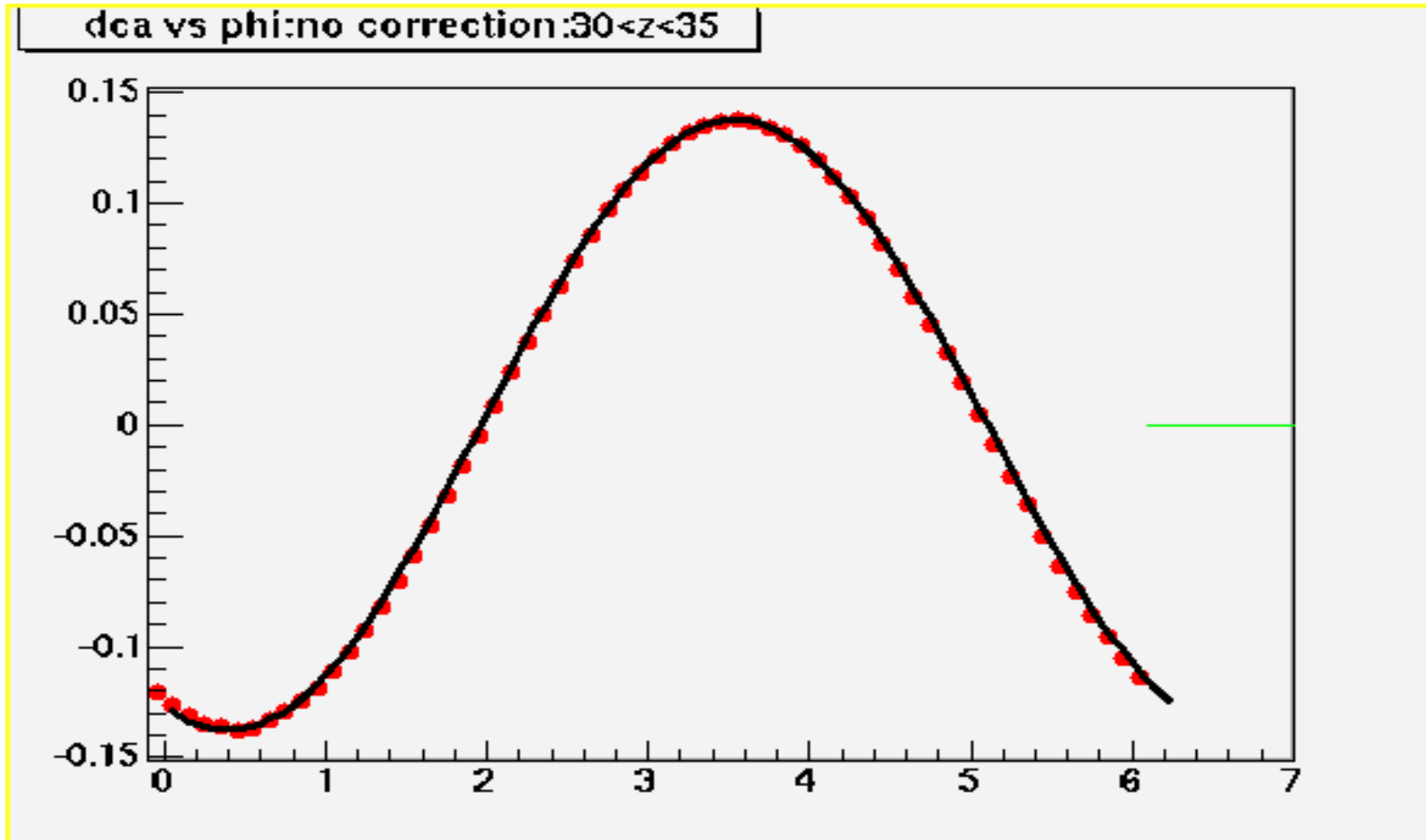


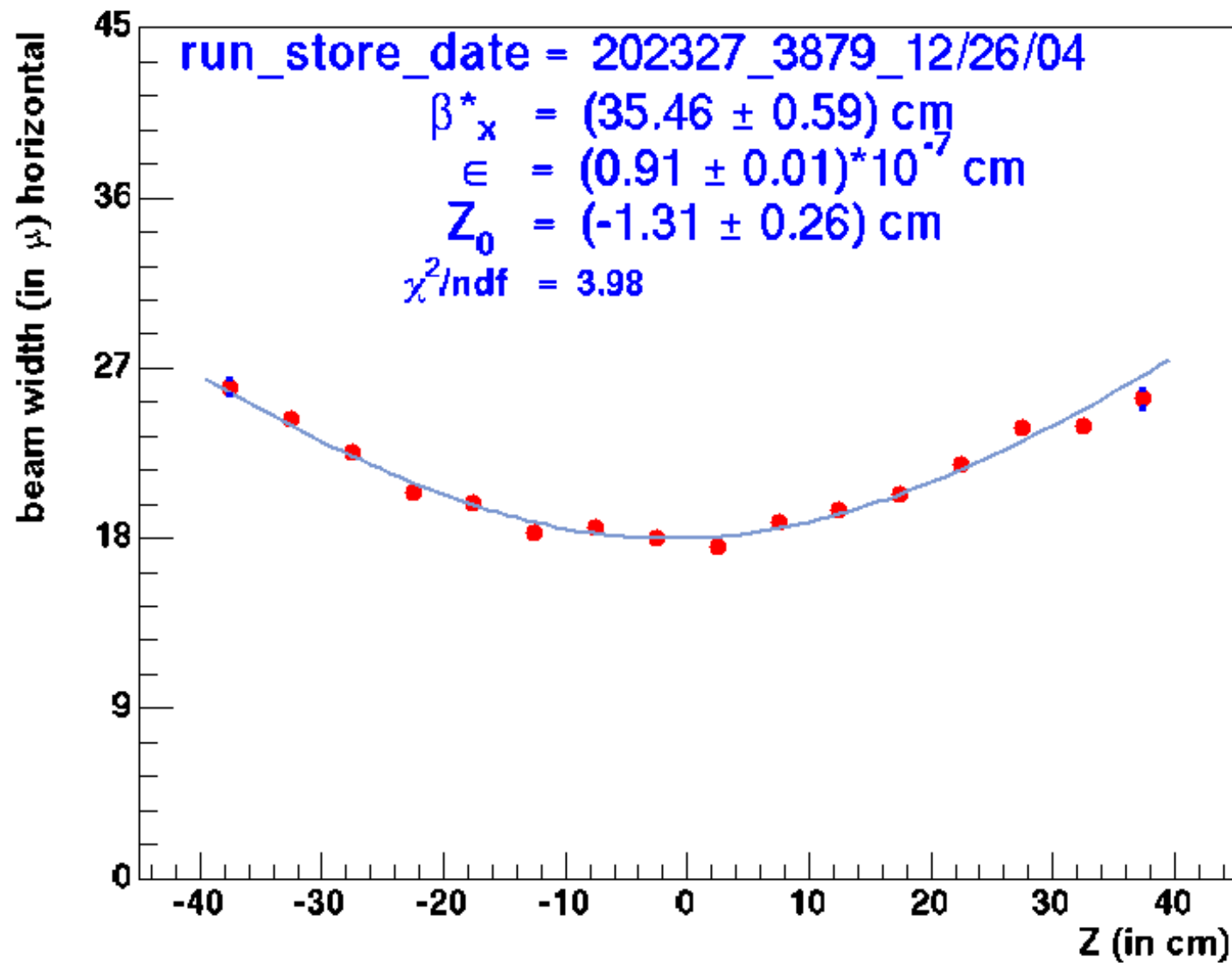
Gaussian Fitting Bin by Bin:

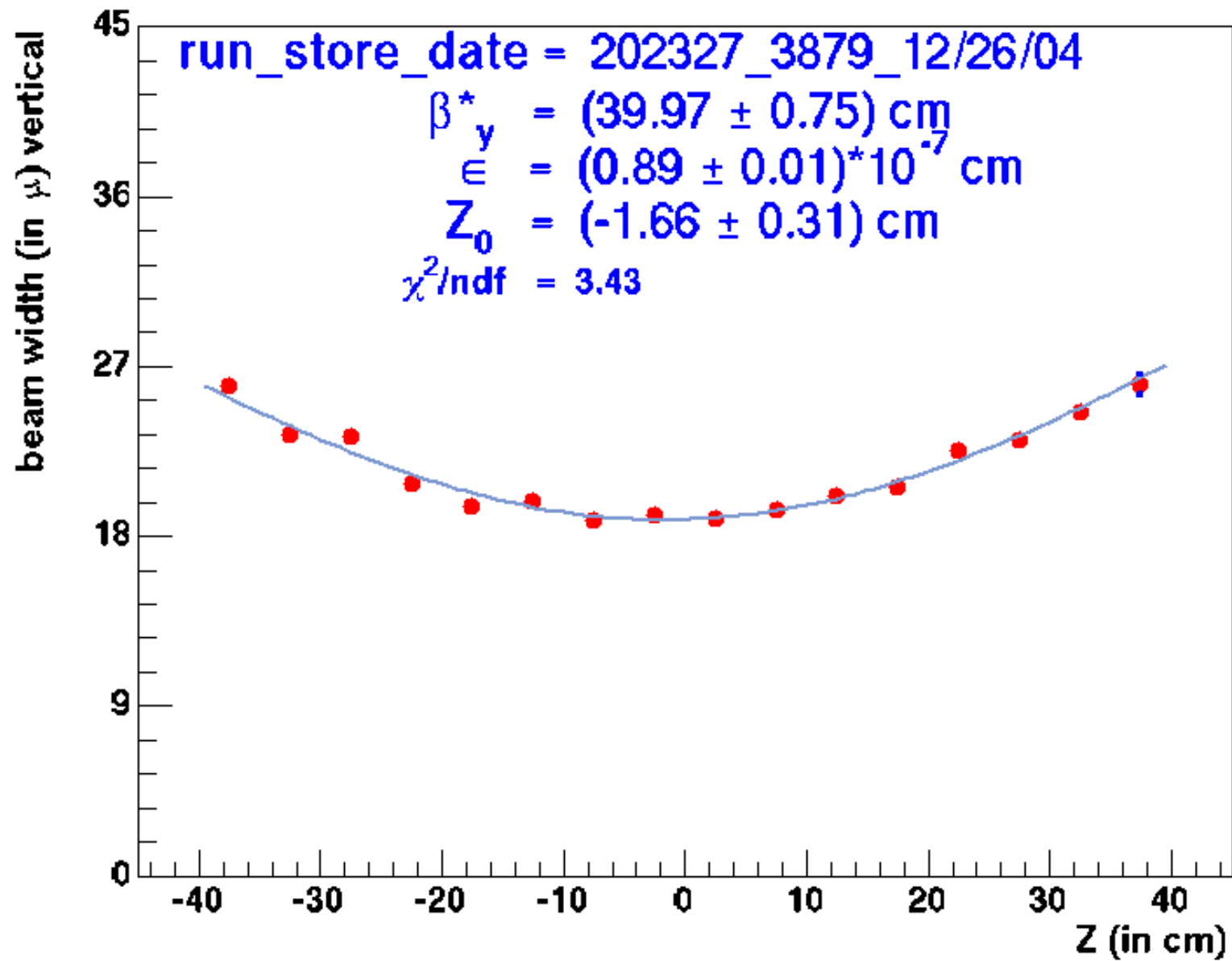
dca vs phi: 2D :no correction:30<z<35

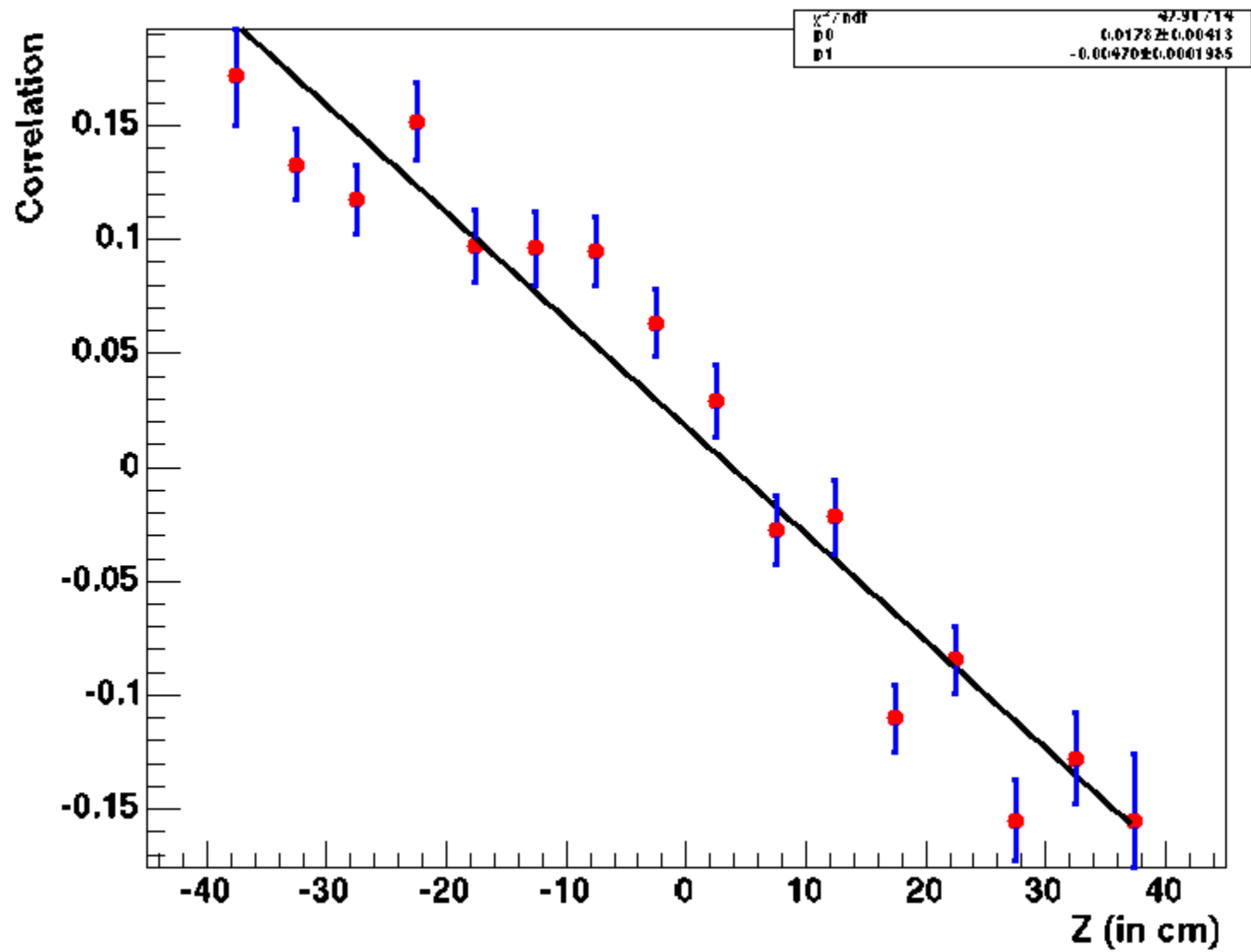


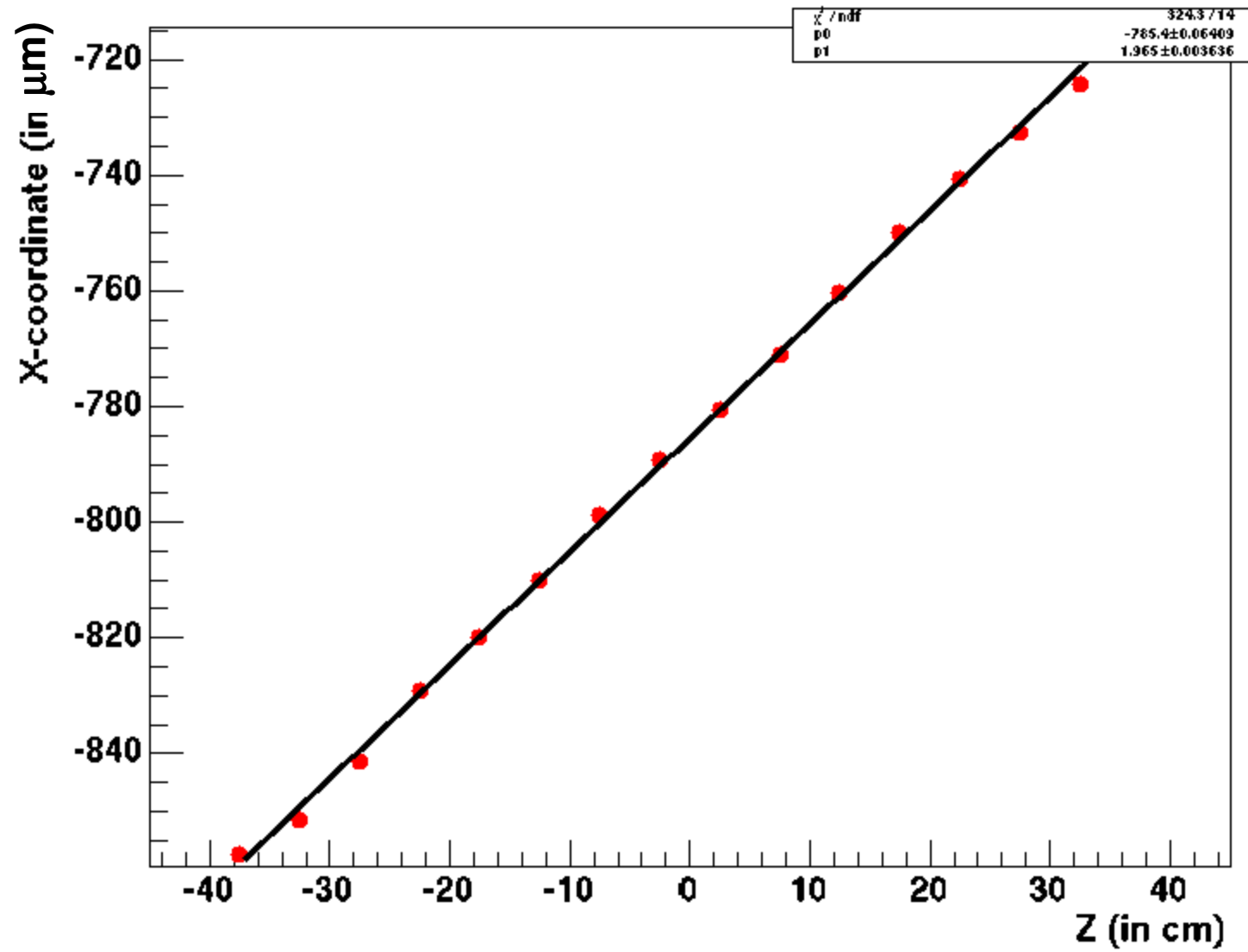
For each projection plot, pick up the fitted mean.
Now the plot looks fine.

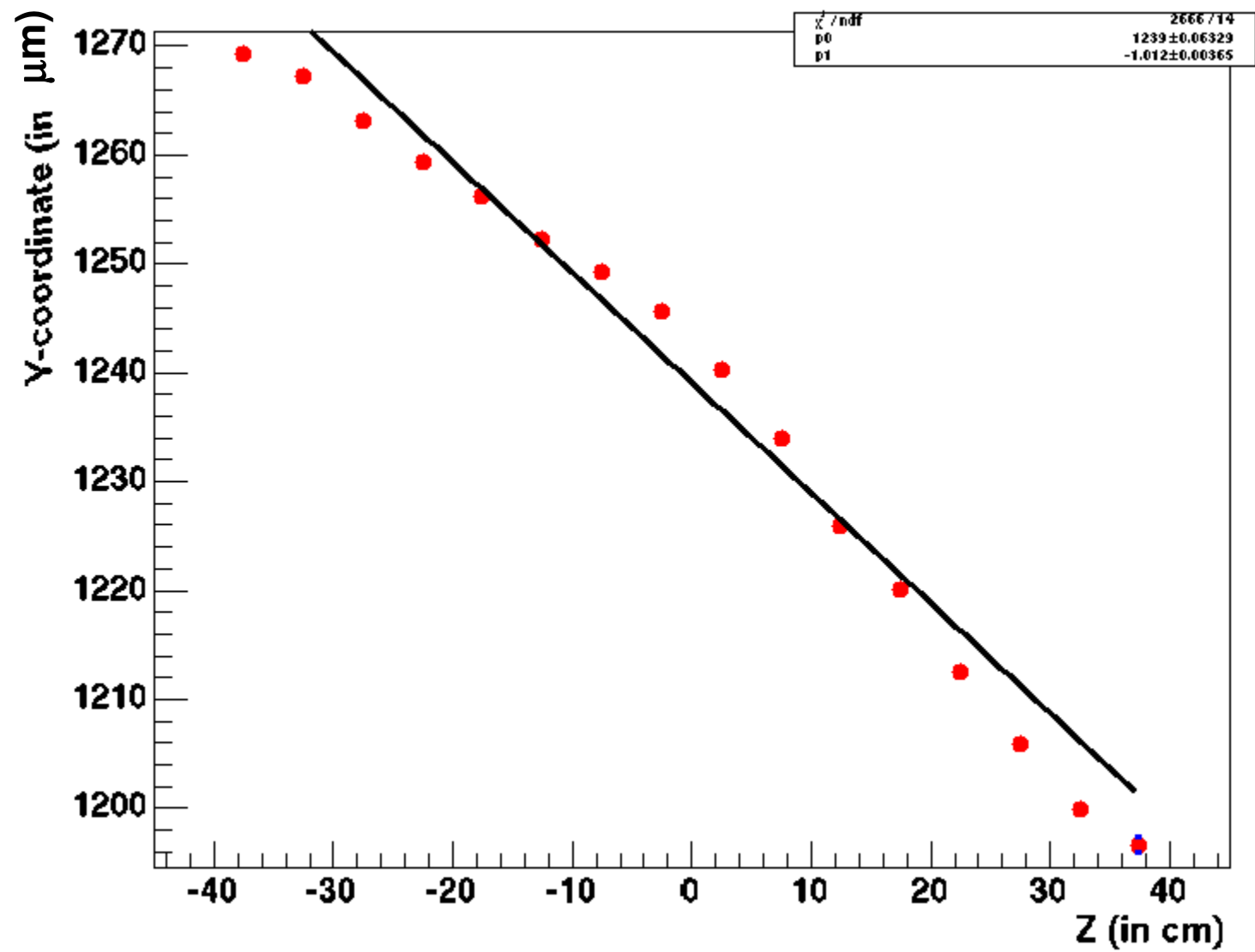


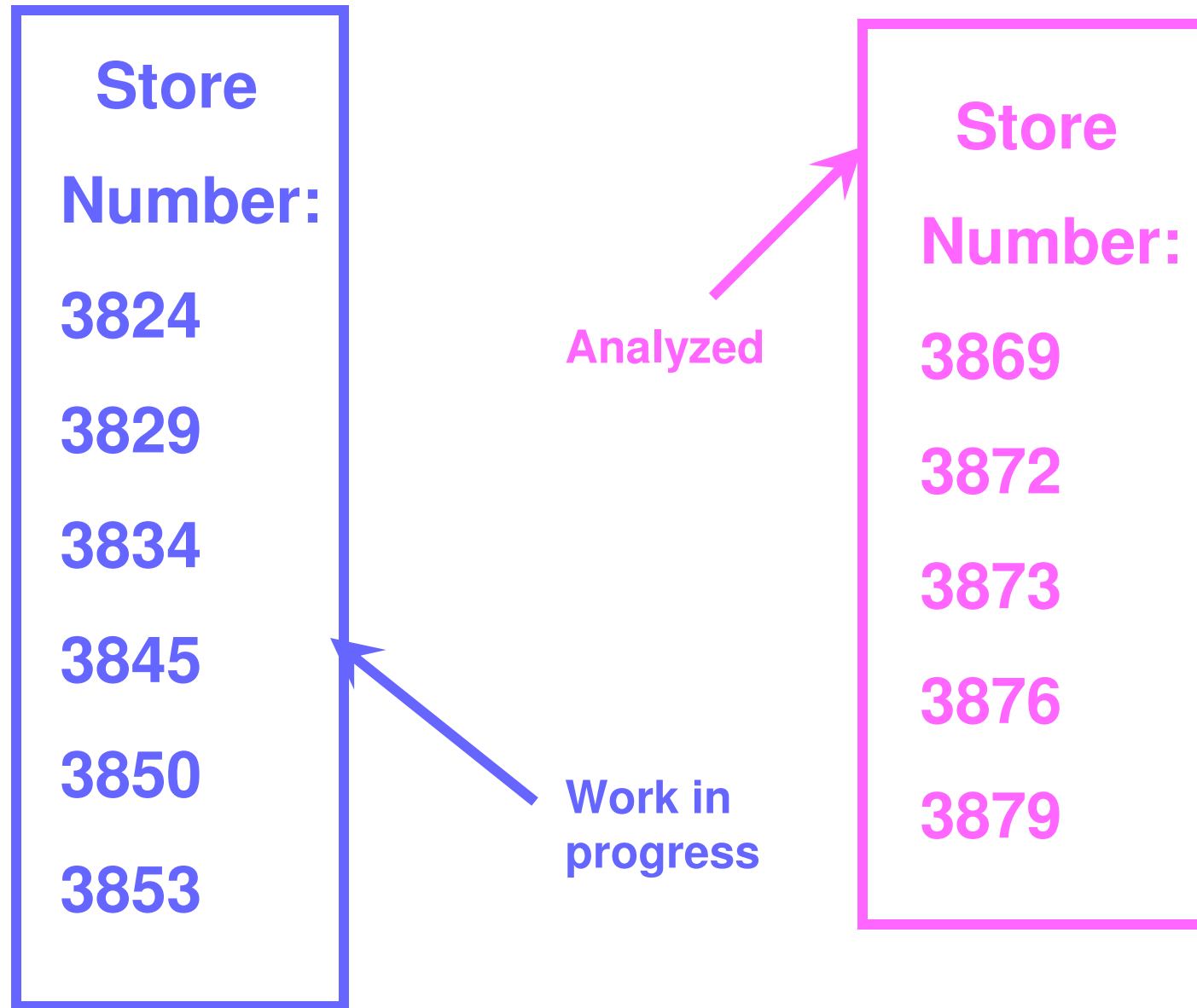


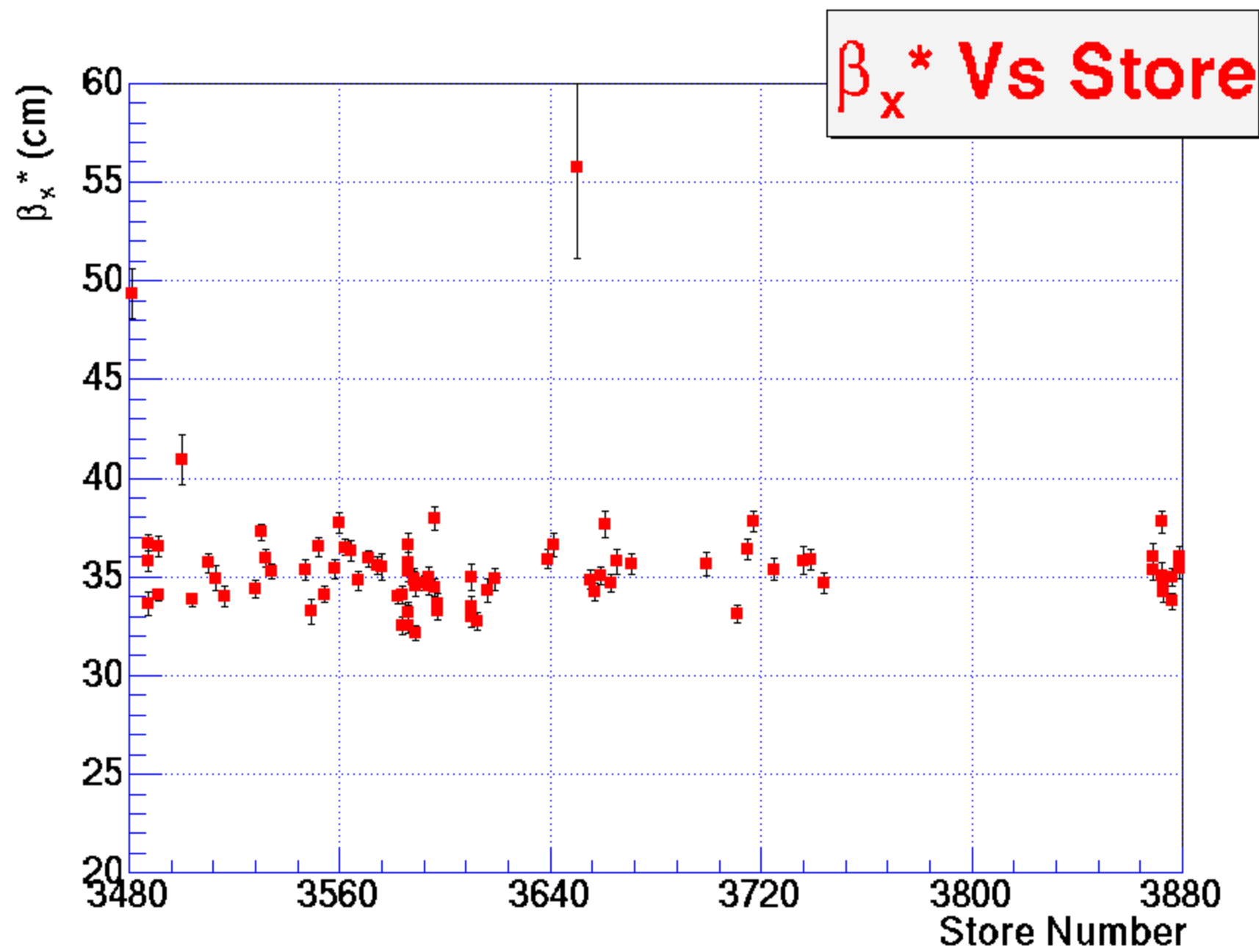


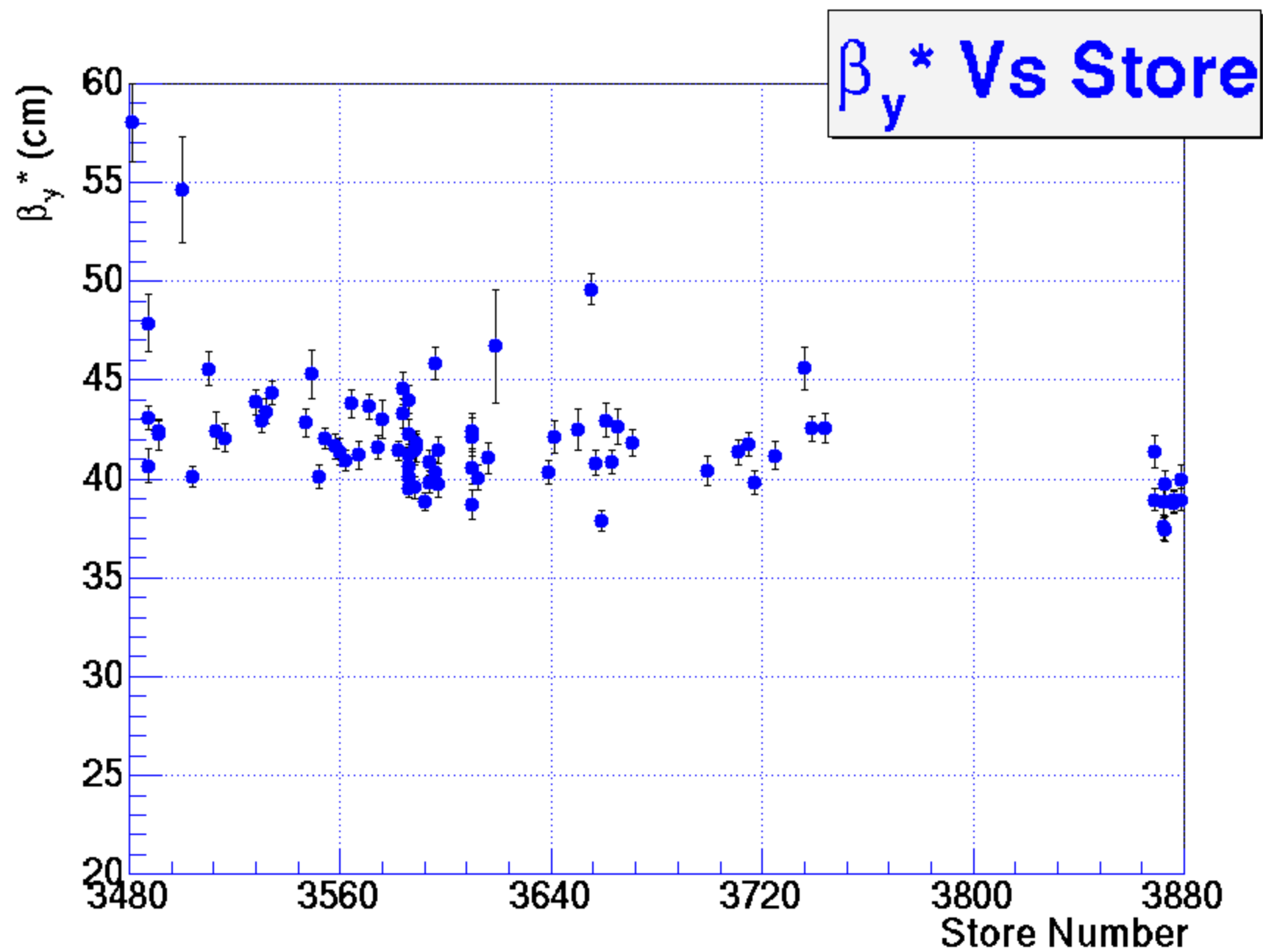




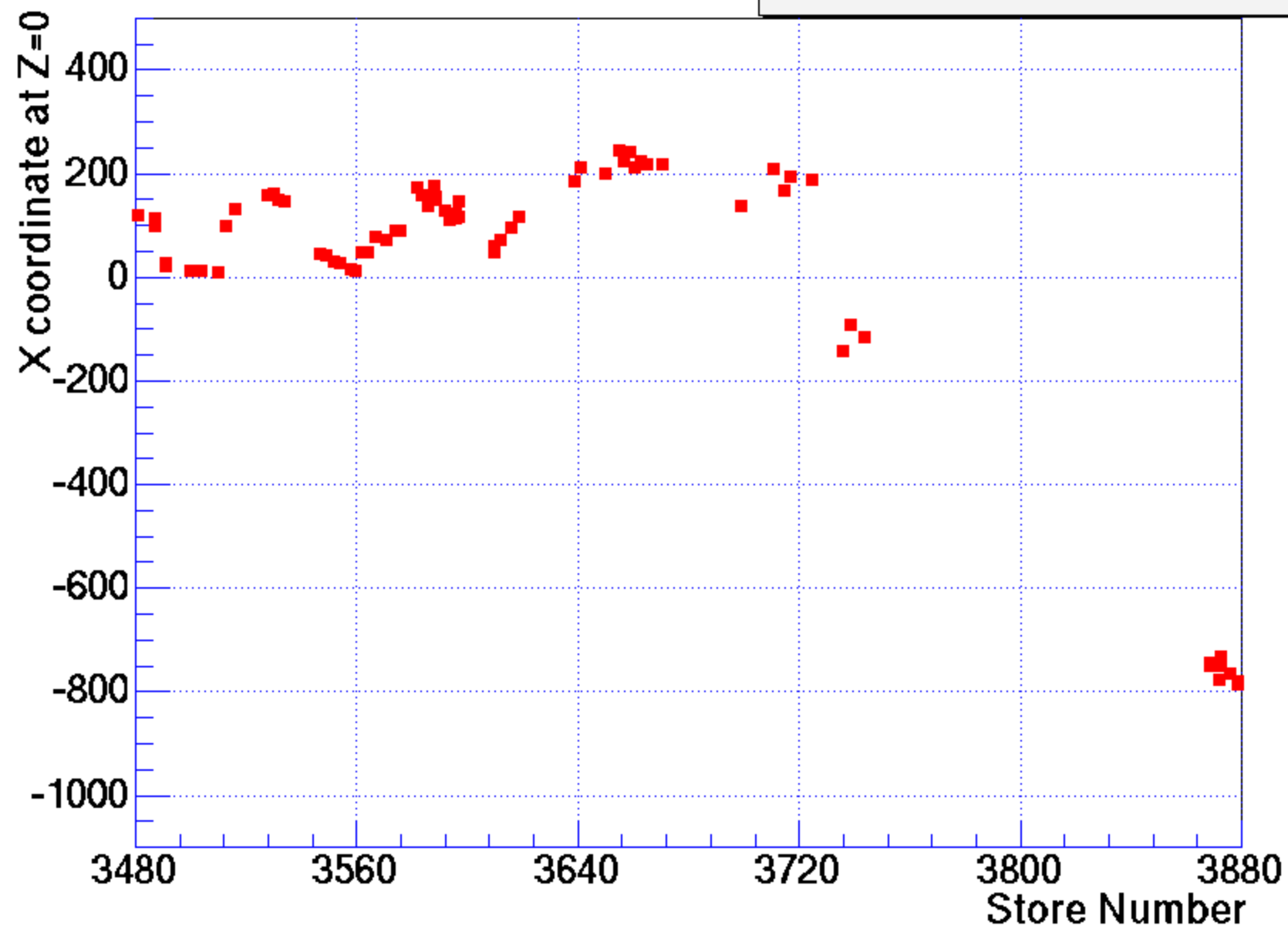




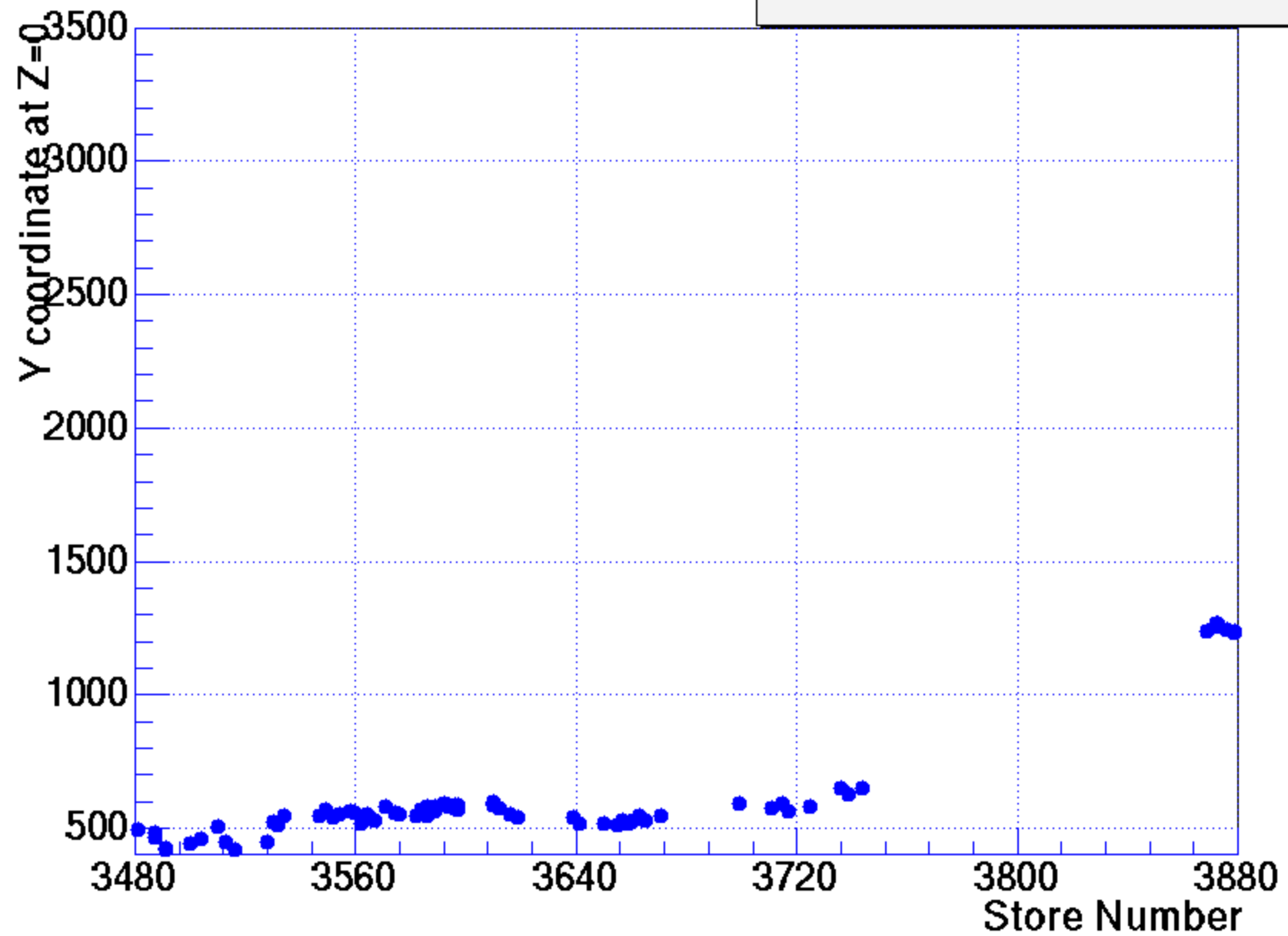




X coordinate at Z=0 Vs Store



Y coordinate at Z=0 Vs Store



Summary

- Interaction point shifted by order of 1 mm.
- Initial measurement shows that β^*_x and β^*_y did not change significantly.
- Detector alignment is not good in y-coor.
- More measurements will be done soon and the updated results will be available in the usual place:

http://www-clued0.fnal.gov/~avdhesh/Beam_main.html

Thanks to Jyothsna Rani and Suyong Choi for their crucial help.